REMARKS

Claims 38-39, 41-61, 63-71, and 73-75 are currently pending in the present application. New claim 75 is added. Claims 38, 39, 43-46, 48, 50, 57-61, 63-71, 73, and 74 are amended to corect informalities and clarify the claimed invention. Claims 40, 62, and 72 are cancelled without prejudice or disclaimer. The subject matter of claim 40 is incorporated into claim 39. The new claim and amended claims contain no new matter and are supported by the whole specification, including page 2, line 29 to page 3, line 1, page 5, line 31 to page 6, line 23, page 9, line 1 to page 11, line 5, and Figures 2, 4, and 8.

The Office Action rejected claims 38-44, 46-50, 52, 57-60, 63, 65, 70-72, and 74 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,095,277 to Bluethman et al. ("Bluethman") in view of U.S. Patent No. 5,659,801 to Kopsaftis ("Kopsaftis").

Applicant traverses these rejections, because the combined teachings of Bluethman and Kopsaftis do not render the claimed invention obvious.

Claim 38 recites, *inter alia*, "embedding at least one microcode update as a module in a print job file, said module being one of a plurality of modules in said print job file; inputting said print job file to said printer, over at least one printer job interface, in a unidirectional fashion, without using any specialized downloading hardware or application routine". The claimed microcode update is in a normal printer data stream that the printer can already receive and that a user can already send without requiring a specific application program. By contrast, Kopsaftis requires an "application program" with specific back-and-forth commands from the "peripheral device". (Kopsaftis, col. 15, lines 29-38). Applicant has carefully reviewed Bluethman and cannot find any reference to any microcode update. Because Kopsaftis requires a special application program and Bluethman does not disclose any microcode update at all, Applicant traverses the rejection of claim 38.

For the same reasons, Applicant traverses the rejection of claims 57 and 70, which correspond to claim 38. Claims 58-60, 63, and 65 depend directly or indirectly from claim 57 and, thus, inherit the patentable subject matter of claim 57. Therefore, Applicant traverses the rejection of claims 58-60, 63, and 65. Claims 71, 72, and 74 depend directly or indirectly from claim 70 and, thus, inherit the patentable subject matter of claim 70. Therefore, Applicant traverses the rejection of claims 71, 72, and 74.

Claim 39 recites, *inter alia*, "interrogating a file header of said print job file wherein a presence of said microcode update in said print job file is indicated by a bit pattern in a header portion of said print job file, not in any job data." Thus, when a print job file is received, the presence of the microcode update is determinable at that time. By contrast, there is a two-command sequence in Kopsaftis. First, there is an "initiator command" and, then, there is a "transfer command". According to Kopsaftis:

> When an initiator command is detected, a waiting state is entered in which the peripheral device is held ready to receive new microcode. The resident processor also includes a detector for a transfer peripheral device command, which includes the new microcode, received while the peripheral device is in the waiting state. (Kopsaftis, col. 2, lines 36-42).

(See also Kopsaftis, abstract). The claimed invention has the advantage over Kopsaftis that no special command sequence is required. No "initiator command" is required to put the system into a waiting state for the next "transfer command". Instead, the presence of the microcode update in the print job file is indicated by a bit pattern in the header of the print job file, not in any job data. Thus, Applicant traverses the rejection of claim 39.

Claim 44 recites, *inter alia*, "after said step of writing, the step of transferring execution to said executable program, without resetting or restarting any processor in said printer." By contrast, Kopsaftis requires restarting the peripheral device after microcode is replaced before normal operation resumes. (Kopsaftis, abstract; col. 2, lines 48-58; col. 10, lines 37-40). Thus, Applicant traverses the rejection of claim 44.

Claim 46 recites, *inter alia,* "loading said executable program, upon receipt of said executable program, said executable program being a portion of said print job file."

Claim 46 does not refer to any execution queue. The claimed invention is bringing in brand new microcode in the printer job file and allowing it to execute immediately and then further process the receipt of the rest of the printer job. When the microcode is received from that printer job file, the microcode instructions are executed. At this point, the processor of the claimed invention is not just executing a different piece of code, but executing microcode that came in on that printer job file, even before the rest of the printer job stream has been received by the printer. It is a single job. The processor executes different code on a self-modifying printer job to, for example, download the rest of it differently. This is completely different from an execution queue that just allows different microcode to run at a different time. Therefore, Applicant traverses the rejection of claim 46.

Claims 41-43, 47-50, and 52 depend directly or indirectly from claim 38 and, thus, inherit the patentable subject matter of claim 38. Therefore, Applicant traverses the rejection of claims 41-43, 47-50, and 52. For the same reasons, Applicant traverses the rejection of claim 71, which corresponds to claim 43.

The Office Action rejected claims 45, 62, and 73 under 35 U.S.C. §103(a) as being unpatentable over Bluethman in view of Kopsaftis and further in view of U.S. Patent No. 5,206,735 to Gauronski et al. ("Gauronski").

Applicant traverses these rejections, because the combined teachings of Bluethman, Kopsaftis, and Gauronski do not render the claimed invention obvious.

Claim 45 recites, *inter alia*, "said executable program returns execution to a previously running program that was in existence before said print job file arrived at said printer" and, similarly, claim 73 recites, *inter alia*, "executing said executable program, wherein said executable program returns execution to a previously running program that was in existence before said print job file arrived at said printer." As one of skill in the art knows, the claimed executable program returning execution is not the same as processing an interrupt in Gauronski. (Gauronski, col. 7, lines 38-46). Gauronski teaches

resuming execution of a previously running print job that was interrupted. In the claimed invention, no print job is interrupted. Rather, control flows to the microcode that was executing before the print job file with the microcode update arrived at the printer. There is no such "interrupt job request" that puts the system into a NOT READY state, inhibiting printing or restarting. (Gauronski, col. 7, lines 29-45).

The Office Action rejected claims 51 and 64 under 35 U.S.C. §103(a) as being unpatentable over Bluethman in view of Kopsaftis and further in view of U.S. Patent No. 4,868,866 to Williams, Jr. ("Williams").

Claim 51 and claim 64 recite, *inter alia*, "wherein said module header comprises a bit pattern that directs a processor in said printer to uncompress said module." Claim 51 depends indirectly from claim 38 and claim 64 depends indirectly from claim 57. Thus claims 51 and 64 inherit the patentable subject matter of claims 38 and 57 respectively and, thus, are patentable over the combination of Bluethman and Kopsaftis. In addition, Williams does not render the subject matter of claims 51 and 64 obvious. Williams discloses a "29 bit dynamic message header [that] provides the message length plus codes that identify a particular predetermined method for decompressing and interpreting the data elements in the message body." (Williams, col. 15, lines 53-56). In Williams, data elements in the message body are decompressed, not a module including a microcode update. The claimed module comprises a microcode update. Therefore, the combination of Bluethman, Kopsaftis, and Williams would change the principle of operation, because the claimed invention is for updating microcode of a printer.

The Office Action rejected claim 61 under 35 U.S.C. §103(a) as being unpatentable over Bluethman in view of Kopsaftis and further in view of U.S. Patent No. 4,174,536 to Misunas et al. ("Misunas").

Claim 61 recites, *inter alia*, "wherein said print job file header further comprises a bit pattern that indicates that said microcode update includes a module, said module including microcode that is to be immediately executed by said processor." Claim 61

depends indirectly from claim 57. Thus, claim 61 inherits the patentable subject matter of claim 57 and, thus, is patentable over the combination of Bluethman and Kopsaftis. In addition, Misunas does not render the subject matter of claim 61 obvious. Misunas discloses an "encoding of bits contained in said read-only memory means [that] precisely specifies the operation of said processor means, causing said processor means to interpret signals representing a packet as consisting of signals representing a packet header, signals representing a plurality of data items, and signals representing a packet trailer." (Misunas, col. 12, lines 27-34). In other words, the processor is directed to operate in such a way as to recognize the structure of a packet, i.e., header, data items, and trailer. The recognition of the structure of the packet in Misunas is completely different from the subject matter of claim 61, where the bit pattern indicates that the microcode update includes a module that has microcode to be immediately executed by the processor. The data items in Misunas are not immediately executed.

The Office Action objected to claims 53-56 and 66-69 as being dependent upon a rejected base claims but said they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
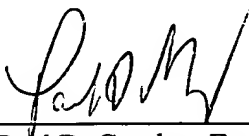
Applicant respectfully submits that the respective base claims are allowable and, therefore, claims 53-56 and 66-69 are also allowable without being rewritten.

In view of the foregoing, Applicant respectfully submits that all of the claims in the present application are patentably distinguishable over the references cited in the Office Action. Accordingly, Applicant respectfully requests that the claims be reconsidered and passed to allowance.

Respectfully submitted,

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Date

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